

## CARING FOR YOUR VOLUMEX BLOWER

All these units (esp. coated versions) run very tight clearances from rotors to casing and rotor-rotor. Ingress of seemingly innocuous airborne debris can cause significant scoring. Excellent filtration via e.g. OE paper element or better still K&N gauze type is essential. Foam filtration is better than nothing but nowhere near as good.

Fiat grade Tutela ZC 90 oil must be used in the front gearcase and the level must be checked at least every 1000km after leaving the level to settle for 10 minutes. On OE installations beware of the lower clip on the reservoir hose fouling the alternator belt, as this is a common cause of oil loss. If the gearcase runs dry the gears will be damaged irreparably within minutes.

The rear bearing case outer cover (4 x M6 nuts) should be removed, cleaned and replenished with approx one heaped teaspoon of bearing grease (eg: Valvoline Multi Purpose Grease NLG-2) once a year. If the old gasket is reused seal it with a light smear of automotive grade silicon sealant. No other periodic maintenance is needed.

The rotors and gears are held in phase by friction alone. There are no splines/dowels/keys locking them together. The units must be run with a 'soft' drive i.e. rubber belt (toothed or Poly Vee) or if shaft driven – connected via a rubber coupling/cushion unit. If the blower is connected direct to a crankshaft the torsional vibration will knock the rotors out of phase sooner or later and this will smash the blower to pieces.

If taken out of service the unit should be protected from corrosion by light spray of WD40 inhibitor thru blower intake port every 4 months and the unit turned over several times by hand. External surfaces (shield the drive pulley when spraying) can be protected similarly on an as-required basis.

The main casing plastic vent tubes should be connected to the OE blower vent pump circuit which operates with hot engine & switched off to vent gasoline from the casing after hot shutdown.

If that system is not available fit non-return valves with a short length of nitrile rubber fuel hose to the tubes. The tubes are extremely delicate so don't overstrain them. The main casing vent tubes are there to prevent pressurised vapour from the casing (due to rotor end leakage) being forced past the front and rear seals and right into the bearing housings. Note: those seals are oriented to prevent oil (front) and grease (rear) leaking into the casing; vapour leakage will quickly degrade the lubricants. The non-return valve allows the small amount of vapour to escape but prevents the blower sucking in air on closed throttle.

Any intake manifold used between the blower and the cylinder head must have a backfire valve fitted.

On used units there is invariably some backlash between the gears. New gears are not available. Excessive backlash or badly worn bearings (especially the front bearings, a special C” close-tolerance 4 –point contact ball bearing array) can lead to the rotors knocking in either direction. Rotors are set up in a special jig using ‘preferential phasing’ to eliminate rotor-rotor contact in direction of rotation. Contra rotation of the unit can often exhibit slight sweeping contact. This is more the case with coated rotors - typically 0.001” bigger on radius than the OE ones - and it is normal and not functionally significant.

Do not over tension the drive belt. It should always be tensioned on the return side and should be a snug fit on the drive pulleys and no more than that.